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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,276	10/23/2003	Mustafa Pinarbasi	SJO92000063US2	2354

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INTERNATIONAL BUSINESS MACHINES CORPORATION
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INTELLECTUAL PROPERTY LAW
SAN JOSE, CA 95193-0001

EXAMINER

VERSTEEG, STEVEN H

ART UNIT PAPER NUMBER

1753

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/693,276

Applicant(s)

PINARBASI, MUSTAFA

Examiner

Steven H. VerSteeg

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,6 and 7 is/are rejected.
7) ☒ Claim(s) 2-5 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/7/04 & 10/23/03.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because the abstract is greater than 150 words. Correction is required. See MPEP § 608.01(b).
3. The disclosure is objected to because of the following informalities: the patent number of the parent application needs inserted on page 1, and the sentence on page 5 at line 13 ends with two periods.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by *Oxygen as a surfactant in the growth of giant magnetoresistance spin valves* by Egelhoff, Jr. et al. (Egelhoff).

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6. For claim 1, Applicant requires a method for making a spin valve comprising providing a substrate, depositing a first ferromagnetic layer having a first surface on the substrate, depositing a spacer layer having a second surface, depositing a second ferromagnetic layer wherein the spacer layer is disposed between the first and second ferromagnetic layers, and exposing one or more of the first and second surfaces to an oxygen partial pressure then decreasing the oxygen partial pressure before depositing a subsequent layer.

7. Egelhoff discloses making a spin valve (abstract) comprising providing a substrate (pg. 6142), depositing a first ferromagnetic layer, depositing a spacer layer, and depositing a second ferromagnetic layer (Figure 1). After the spacer layer is deposited, the spacer layer is exposed to oxygen and then the deposition continues (pg. 6144). Because the oxygen is fed after the spacer layer is deposited, the surface of the spacer layer is exposed to the oxygen and thus, "one...of the first and second surfaces" is exposed. The one surface exposed being the spacer layer surface. There is no oxygen fed to the system when the remaining layers after the spacer layer are deposited (Figure 1; pg. 6144).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Oxygen as a surfactant in the growth of giant magnetoresistance spin valves* by Egelhoff, Jr. et al.

(Egelhoff) in view of US 5,871,622 to Pinarbasi.

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10. For claim 6, Applicant requires an ion beam sputtering process for depositing the first and second ferromagnetic layers and the spacer layer.

11. Egelhoff is described above, but uses dc magnetron sputtering (pg. 6142).

12. Pinarbasi discloses that when making a spin valve, ion beam sputtering is more effective at depositing the layers in a spin valve than dc magnetron sputtering (col. 2, l. 9-56; abstract).

13. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Egelhoff to utilize ion beam sputtering because of the knowledge that it is more effective than dc magnetron sputtering for making spin valves.

14. For claim 7, Applicant requires the oxygen molecules to be directed toward the substrate with a shutter fully opened for the surfaces to be directly exposed to the oxygen.

15. In being obvious to use the ion beam sputtering apparatus of Pinarbasi, it would thus be obvious to use the shutter fully opened in Pinarbasi (see Figure 1).

Allowable Subject Matter

16. Claims 2-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. The following is a statement of reasons for the indication of allowable subject matter: it is neither anticipated nor obvious to one of ordinary skill in the art to have a method of making a spin valve as claimed by Applicant in claim 2.

18. Egelhoff discloses exposing the substrate after depositing the spacer layer (pg. 6144), but indicates that the best spin valves were formed when there is a continuous oxygen background of

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5×10^{-9} Torr (pg. 6145). Modifying Egelhoff to use an oxygen pressure as that claimed by Applicant would require hindsight.

General Information

For general status inquiries on applications not having received a first action on the merits, please contact the Technology Center 1700 receptionist at (571) 272-1700.

For inquiries involving Recovery of lost papers & cases, sending out missing papers, resetting shortened statutory periods, or for restarting the shortened statutory period for response, please contact Denis Boyd at (571) 272-0992.

For general inquiries such as fees, hours of operation, and employee location, please contact the Technology Center 1700 receptionist at (571) 272-1300.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H. VerSteeg whose telephone number is (571) 272-1348. The examiner can normally be reached on Mon - Thurs (6:30 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Steven H VerSteeg
Primary Examiner
Art Unit 1753

shv
August 19, 2005